

DETAILED ACTION

Table of Contents

<i>Amendment & Claim Status</i>	2
<i>Information Disclosure Statement</i>	2
<i>Specification</i>	2
<i>Response to Arguments</i>	2
Remarks regarding Rejections Under 35 U.S.C. § 103	2
<i>Claim Objections</i>	3
<i>Claim Rejections - 35 U.S.C. § 112</i>	3
<i>Claim Rejections - 35 U.S.C. § 102</i>	3
Brill	4
<i>Claim Rejections - 35 U.S.C. § 103</i>	7
Brill in view of Hsu	7
<i>Allowable Subject Matter</i>	7
Reasons for Indicating Allowable Subject Matter	8
<i>Conclusion</i>	8

Amendment & Claim Status

[1] This Detailed Action is responsive to Request for Reconsideration (hereinafter “Request”) received on Jan. 21, 2010. Claims 1-9 and 50-64 pending; claims 10-49 cancelled.

Information Disclosure Statement

[2] The information disclosure statement filed Jan. 21, 2010 and Mar. 19, 2010 complies with the provisions of 37 C.F.R. § 1.97, 1.98 and M.P.E.P. § 609. It has been placed in the application file, and the information referred to therein has been considered as to the merits.

Specification

[3] In response to Request at 2 found persuasive, the previous specification objections are withdrawn.

Response to Arguments

Remarks regarding Rejections Under 35 U.S.C. § 103

[1] The Request at 3-6 regarding rejected Claims 1, 6, 50, 54-58, 63 and 64 under U.S.C. § 103(a) as being unpatentable over Cham in view of the '490 patent have been respectfully and fully considered, and are both persuasive and now moot in view of the new grounds of rejection.

Claim Objections

- [4] The following is a quotation of the second paragraph of 37 C.F.R. § 1.75(a):
The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery
- [5] **Claims 50** are objected to under 37 C.F.R. § 1.75(a), for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.
Claim 50, line 1, should be "wherein the selected detection algorithm".

Claim Rejections - 35 U.S.C. § 112

- [6] The following is a quotation of the second paragraph of 35 U.S.C. § 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- [7] **Claims 1-9 and 50-56** are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 8, "the physical objects in the image at the second resolution" lacks clear antecedent basis. It is also unclear whether these are the scene including physical objects represented by the image at the first resolution, or different physical objects.

Claim Rejections - 35 U.S.C. § 102

- [8] The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Brill

[9] **Claims 1, 4, 6, 50-51, 54-58, 61, 63 and 64** are rejected under § 102(e) as being anticipated by Brill et al., U.S. Pat. No. 6,542,621 (“Brill”) (filed Aug. 31, 1999, claiming benefit to Aug. 31, 1998).

Regarding **Claim 1**, Brill discloses a method (fig. 1) for identifying objects (e.g., the objects in fig. 3a) in an image comprising:

receiving an image (fig. 1, item 23; fig. 2b) with a first resolution (the resolution of figs. 2, 3a), the image representing a scene including physical objects (e.g., the objects in fig. 3a such as the two persons, desk, chair, carpet, walls);

transforming the image at the first resolution to an image at a second resolution (figs. 2d-h), the first resolution being higher than the second resolution (“the difference image of FIG. 2C is sub-sampled in order to reduce the number of pixels, for example to a 128 by 128 or 256 by 256 pixel image. The resulting low-resolution image is shown in FIG. 2D.” at 4:5-18¹);

processing the image at the second resolution to identify an object (fig. 2h, item 43; “bounding box” at 5:50-57) from among the physical objects (e.g., the objects in fig. 3a such as the two persons, desk, chair, carpet, walls) in the image at the second resolution;

selecting a detection algorithm from among plural detection algorithms (5:11-30 that discloses at least two different detection algorithms dependent on the height of the bounding box; e.g., classifying it as briefcase when the height of the bounding box is not tall enough) based on a condition associated with the object (“the height of the bounding box” at 5:11-30) identified at the second resolution; and

processing the image at the first resolution using the object identified at the second resolution to identify another object (e.g., the other objects that are not part of the already identified bounding box; e.g., the “p-template” of another person when the two persons overlap

¹ “4:5-18” short notation for “Col. 4, lines 5-18”.

using the tracking information from the previous frame as shown in fig. 6d) from among the physical objects (e.g., the objects in fig. 3a such as the two persons, desk, chair, carpet, walls) in the image at the first resolution according to the selected detection algorithm (the selected detection algorithm that already detected and classified the first object).

Regarding **Claim 4**, Brill discloses wherein at least one of the processing of the image at the second resolution (fig. 2h, item 43; "bounding box" at 5:50-57) and the processing of the image at the first resolution is performed as a function of a type of terrain (whether foreground or background terrain in the image at the second resolution as examined in e.g., fig. 2e) in the image at the second resolution (figs. 2d-h) and the image at the first resolution, respectively.

Regarding **Claim 6**, Brill discloses further comprising:

determining whether the object and the another object are desired objects based upon a context (the context being the area where the camera is located for "physical security, home automation, and sporting event analysis. . . necessary to track the movements of one or more people and objects in a scene monitored" at 2:6-17) associated with at least one of the image at the first resolution and the image at the second resolution.

Regarding **Claim 50**, Brill discloses wherein the detection algorithm for identifying the other object at the first resolution is automatically selected from among the plural detection algorithms (it is automatically selected dependent on "the height of the bounding box" at 5:11-30).

Regarding **Claim 51**, Brill discloses wherein the plural detection algorithms include at least two algorithms respectively corresponding to gray level co-occurrence identification, linear object identification ("the height of the bounding box" at 5:11-30), primitive extraction identification, cloud masking, river masking, activity detection identification, edge extraction identification, gradient magnitude thresholding, busy mask identification, gradient direction edge thinning, line extraction identification, segmentation "the height of the bounding box" at 5:11-30, region merging, collinear line identification, parallel line identification, parallel edge identification, intensity valuation identification, intensity variance identification, small object detection, morphological filtering, structure detection, lines of communication detection, and contextual line reasoning.

Regarding **Claim 54**, Brill discloses wherein the receiving of the image includes receiving the image at the first resolution from at least one of an imaging device (fig. 1, item 23) and a photographic device.

Regarding **Claim 55**, Brill discloses wherein the condition associated with the object identified at the second resolution includes at least one of a geographic location, a terrain type, a ground sample distance, weather, a time of day, temperature, a viewing condition, a band frequency of a sensor, a degree of freedom of the sensor, a viewing angle of the sensor, and a positional vector ("the height of the bounding box" at 5:11-30 includes the use of a positional vector in the image).

Regarding **Claim 56**, Brill discloses displaying at least one of the object identified at the second resolution and the another object identified at the first resolution on a display device (fig. 1, item 21).

Regarding **Claim 57**, Claim 1 recites identical features as in the computer-readable recording medium (fig. 1, items 33,34) having a computer program (it is inherent the processor and memory and a program to run the computer and implement the method-steps) recorded thereon that causes a computer to identify objects (e.g., the objects in fig. 3a)) in an image (fig. 1, item 23; fig. 2b), the program causing a computer to perform operations as in Claim 57. Thus, references/arguments equivalent to those presented above for Claim 1 are equally applicable to Claim 57.

Regarding **Claim 58**, Claim 55 recites identical features as in the computer-readable recording medium as in Claim 58. Thus, references/arguments equivalent to those presented above for Claim 55 are equally applicable to Claim 58.

Regarding **Claim 61**, Claim 51 recites identical features as in the computer-readable recording medium as in Claim 61. Thus, references/arguments equivalent to those presented above for Claim 51 are equally applicable to Claim 61.

Regarding **Claim 63**, Claim 6 recites identical features as in the computer-readable recording medium as in Claim 63. Thus, references/arguments equivalent to those presented above for Claim 6 are equally applicable to Claim 63.

Regarding **Claim 64**, Claim 56 recites identical features as in the computer-readable recording medium as in Claim 64, including the display device (fig. 1, item 21) communicatively

connected to the computer (fig. 1, item 27). Thus, references/arguments equivalent to those presented above for Claim 56 are equally applicable to Claim 64.

Claim Rejections - 35 U.S.C. § 103

[10] The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Brill in view of Hsu

[11] **Claim 7** is rejected under § 103(a) as being unpatentable over Brill in view of U.S. Patent No. 6,618,490 (“Hsu”).

Regarding **Claim 7**, Brill does not disclose wherein the object is a river.

Hsu discloses a method (fig. 6) for identifying objects and features in an image that includes wherein the object is a river (“a river has been labeled from the single feature image”; fig. 8d).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the objects identified of Brill to include rivers as taught by Hsu “to efficiently manipulate, analyze, and display all forms of geographically referenced information” and to “using newly-generated images, described above, to extract additional objects from the original image. The newly-created image can be used as an input to the original segmentation analysis, creating an additional information layer to perform object extraction. For instance, if a river has been labeled from the single feature image and a buffer around the river is generated around the river boundary contour, the buffer can be used to infer that a given object is located within a predetermined distance from the river bank.” Hsu at 4:6-8 and 14:44-53 (emphasis added).

Allowable Subject Matter

[12] **Claims 2, 5, and 53** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. § 112, 2nd paragraph set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

[13] **Claims 59, 60, and 62** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for Indicating Allowable Subject Matter

[14] The following is a statement of reasons for the indication of allowable subject matter:

Regarding **Claim 2**, while the prior art of record discloses transforming the image at the second resolution to an image at a third resolution, the second resolution being higher than the third resolution, the prior art of record does not teach processing the image at the third resolution to identify yet another object, wherein the yet another object is employed in the identification of the object and the another object. **Claim 59** would be allowable by analogy. Claims 3, 8-9, 52, and 60 would be allowable by dependency.

Regarding **Claim 5**, while the prior art of record discloses the method of Claim 4, the prior art of record does not teach wherein the type of terrain is identified using a priori information and a gray level co-occurrence identification.

Regarding **Claim 53**, while the prior art of record discloses the method of Claim 1, the prior art of record does not teach selecting the detection algorithm includes selecting a second detection algorithm, which is different from the first detection algorithm, from among the plural detection algorithms based on the condition associated with the object identified at the second resolution. **Claim 62** would be allowable by analogy.

Conclusion

[15] Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID P. RASHID whose telephone number is (571)270-1578 and fax number (571)270-2578. The examiner can normally be reached Monday - Friday 7:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-74537453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624

David P Rashid
Examiner
Art Unit 26244